



Arena Refrigerant Replacement & Energy Savings Program

Parks & Recreation

February 6, 2024

Agenda & Goals

Introductions

- Johanna Berg, Interim County Manager
- Mark McCabe, Parks & Recreation Director

Goals

- Provide the Board with an overview of ice arena refrigeration system operational challenges.
- Explain energy savings program opportunities Parks has been seeking to fund refrigeration system replacements and reduce energy consumption.
- Obtain Board endorsement on continuing next steps with the energy savings program.

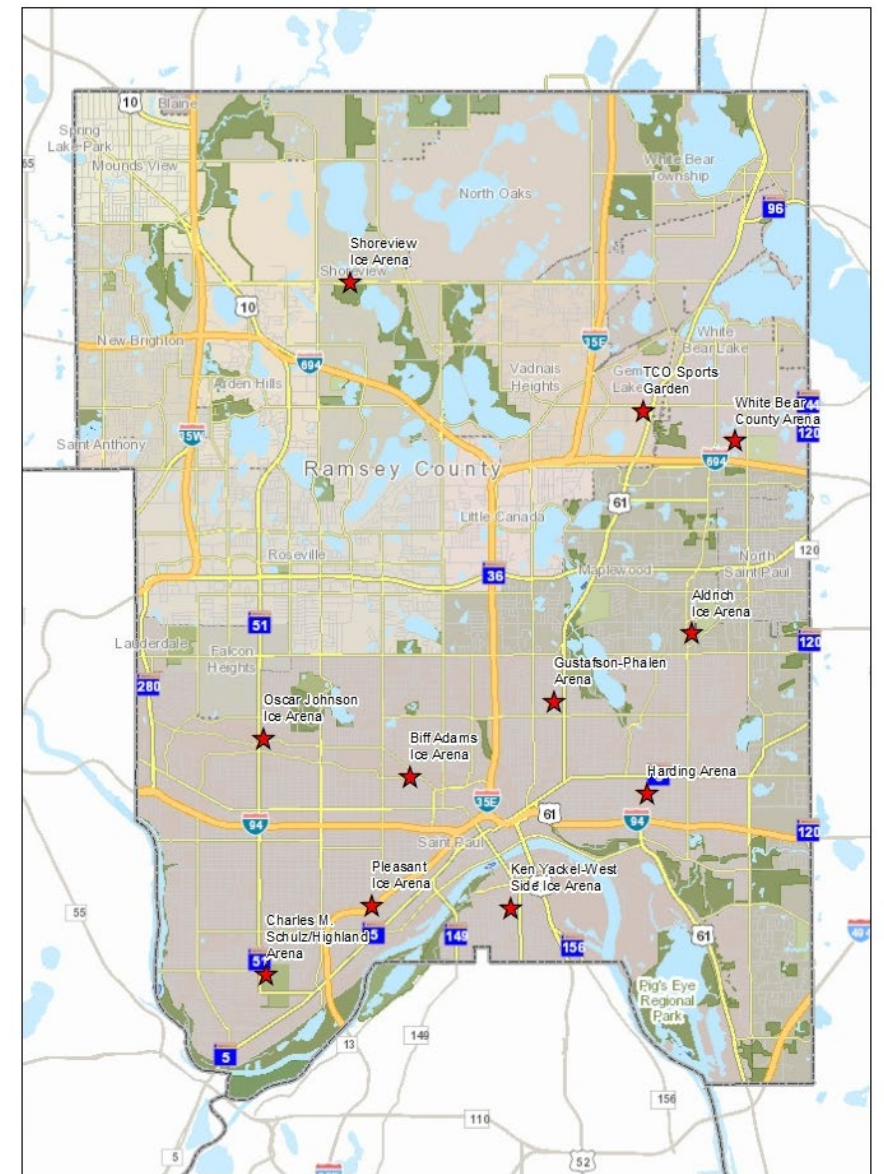
Arena System

Saint Paul Arenas

- Biff Adams
- Charles M. Schulz
- Gustafson-Phalen
- Harding
- Ken Yackel-West Side
- Oscar Johnson
- Pleasant

Suburban Arenas

- Aldrich (Maplewood)
- Shoreview
- TCO Sports Garden (Vadnais Heights)
- White Bear (White Bear Lake)



Ramsey County Parks & Recreation Department
Ice Arenas



R-22 Refrigeration Issue

- All Ramsey County ice arenas except TCO Sports Garden utilize R-22 refrigerant.
- As of 2020, the federal government no longer allows production of R-22 due to ozone depletion properties.
- It is legal to continue to utilize R-22 as a refrigerant.
- Supplies of R-22 are limited since it is no longer being manufactured.
- Refrigerant leaks do occur, a supply of R-22 is needed to continue operations of the system.
- A replacement refrigerant is needed to ensure continuity of operations.



Arena Energy Use Challenges

- Arenas account for 87% of all energy consumed in Parks & Recreation facilities.
- Specialized Building Automation Systems are needed to maintain ice temperatures while also reducing unnecessary consumption when arenas are not in use overnight.
- Warmer temperatures are putting additional stress on mechanical systems and are increasing energy consumption.
- Most arenas were built in the 1970s before modern energy conservation practices were in place.

Arena Strategic Planning and Community Engagement

- Parks & Recreation's vision is to create a dynamic, community-centered system that provides opportunities for Ramsey County's ever-changing community to engage with inclusive and welcoming sites and programming.
- Parks has been engaging the community regarding use of arena facilities and future recreational needs. Community feedback has informed recommendations for future use of arena facilities.
- Created a tiered arena structure to demonstrate long range plans for facilities and corresponding investments.

Tier 1 - Facilities with long term future as ice arenas, larger venues with strong resident use.

Tier 1 - Arena Investments and Funding Strategy

- Aldrich: Estimated \$12.8 M renovation project including energy savings upgrades.
- Highland: Estimated \$8.7 M renovation project including energy savings upgrades.
- TCO Sports Garden: Refrigerant up to date. Additional energy work to be completed.

Arena	Tier 1	Investment Needed	Funding Strategy	Community Engagement
Aldrich	x	Highest Investment	2024 State Bonding Bill	Complete
Highland	x	Highest Investment	Future State Bonding & County CIP	Complete
TCO Sports Garden	x	Minimal Investment	Existing Capital Funds	Complete

Tier 2 - Facilities with significant resident use, strong youth associations, practice rinks / smaller facility capacity.

Tier 2 – Arena Investments and Funding Strategy

Arena	Tier 2	Investment Needed	Funding Strategy	Community Engagement
Oscar Johnson	x	Mid-Level Investment	Honeywell Energy Program	In Process
Shoreview	x	Mid-Level Investment	Honeywell Energy Program	In Process
West Side	x	Mid-Level Investment	Honeywell Energy Program	Complete
White Bear	x	Mid-Level Investment	Honeywell Energy Program	In Process

Tier 3 - Facilities where historical use has changed, practice rinks / smaller facility capacity.

Tier 3 – Investments and Funding Strategy

Arena	Tier 3	Investment Needed	Funding Strategy	Community Engagement
Biff Adams	x	Mid-Level Investment	Frogtown Curling Club & State of MN	Complete
Gustafson-Phalen	x	To Be Determined	To Be Determined	Future
Harding	x	To Be Determined	To Be Determined	Future
Pleasant	x	To Be Determined	To Be Determined	Future

Financing of Refrigeration System Replacements

- Historically there has not been capacity in CIP to fund these replacements.
- Parks applied for State funding through the Mighty Ducks program in past legislative cycles and was not awarded grant funding.
- A request for refrigeration system replacement and building renovation funds for Aldrich Arena is the county's third overall bonding priority for the 2024 legislative session.
- Staff researched federal and state programs and are exploring an energy savings program with Honeywell Inc. that could help fund refrigeration system replacements along with additional energy upgrades.

Honeywell Program Leverages State and Federal Resources

State program called “Energy Savings Performance Contracting”

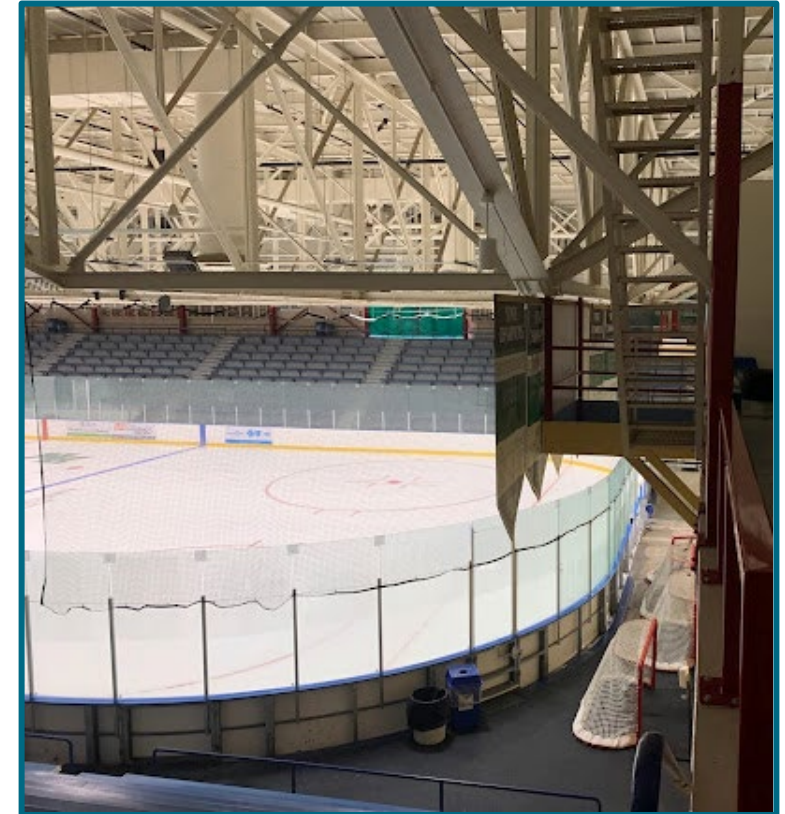
- State Statute 471.345.
- Applies a budget-neutral approach to making building improvements that reduce utility usage and increase operational efficiency.
- Pay for today’s facility upgrades with tomorrow’s utility savings.
- Savings/performance are guaranteed by the Energy Service Company.

Federal resources obtained through Inflation Reduction Act 2022

- Significant funding opportunities available for renewable projects via direct payments with public entities.
- Need to act soon, once federal funds are exhausted, program will end.

Energy Savings Program – Honeywell Partnership

- Preliminary evaluations by Honeywell deemed an energy savings/payback program was not financially viable for replacing Tier 1 arenas with high investment refrigeration systems due to significant infrastructure replacement costs.
- The preliminary evaluation warranted further exploration of mid-level investment installing refrigeration systems at Tier 2 arenas (West Side, Oscar Johnson, Shoreview, White Bear).
- County Board authorized Honeywell to begin formal analysis in November.
- If analysis determines systems can be replaced by utilizing energy savings, Ramsey County would not have to make capital investments.



Honeywell Partnership Proposed Scope Of Work

	Aldrich	Highland	TCO Sports Garden	Oscar Johnson	Shoreview	West Side	White Bear Lake	Gustafson-Phalen	Harding	Pleasant
Replace R-22 refrigerant			✓	x	x	x	x			
Replace chiller				x	x	x	x			
LED Lighting	✓	x	✓	x	x	x	x	x	x	x
Using cool water systems to re-surface ice			✓	x	x	x	x			
Utilize heat energy from icemaking for building heat				x	x	x	x			
Install efficient heating for spectators				x	x	x	x			
Building management system controls			✓	x	x	x	x			
Submetering - zoned energy monitoring				x	x	x	x			
Building automation software optimizes energy efficiency				x	x	x	x			
Improved insulation and reduction of heat escape		x	x	x	x	x	x	x	x	x
Install glycol pump motors				x	x	x	x			
Install solar panels	x		x							
Add dehumidification				x	x	x	x			

✓ Work previously completed
 X Proposed work

Program Finances and Term

- If all energy cost savings are realized, the savings would pay for the entire cost of capital investments in these facilities, estimated at a \$6.2M value.
- The term of the agreement that would yield enough saving to pay back the investment maximum of 20 years.
- Once the agreement is final, Honeywell guarantees the energy savings. If annual savings are less than guaranteed savings Honeywell will pay the shortfall.

Program Benefits

- Replaces up to four outdated refrigeration systems to ensure ongoing operations.
- Decreases overall county capital funding request for refrigeration replacement by using energy savings to pay for significant portion of needed investments.
- Advances county's energy consumption reduction goals as improvements project to reduce energy consumption in arena facilities by 25-30%.
- Ensures continued operations of arenas.

Next Steps with Energy Program Evaluation

- Evaluate energy and operational savings site by site.
- Work with Honeywell and County finance teams to vet a financing plan.
- Finalize agreement ensuring energy savings payback as way of financing refrigeration system replacements.



Open Discussion